

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/020738

International filing date (day/month/year)
29.06.2004

Priority date (day/month/year)
02.07.2003

International Patent Classification (IPC) or both national classification and IPC
C07D413/14, C07D413/06, A61K31/422, A61P31/04

Applicant
MERCK & CO., INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/020738

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/020738

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	9-11

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43*bis*.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

see form 210

Re Item V.

1. The following documents are referred to in this communication:

D1 : WO 03/027083 A (KYORIN SEIYAKU KK ; FUKUDA YASUMICHI (JP);
MERC I & ; CO INC (US); HAMMON) 3 April 2003 (2003-04-03)

D2 : DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE,
COLUMBUS, OHIO, US; XP002303263 retrieved from
CAPLUS accession no. 2003:576097 Database accession no. 139:85332

D3 : WO 01/81350 A (ASTRAZENECA UK LTD ; BETTS MICHAEL JOHN (GB);
GRIFFIN DAVID ALAN (GB);) 1 November 2001 (2001-11-01)

2. **Novelty**

The compounds disclosed in D1 differ from the compounds of the present application in that they lack a nitrogen-containing ring attached to the methylene group on the oxazolidin-2-one ring. The compounds disclosed in D2 and D3 differ in that they lack the bicyclo[3,1,0]hexane ring. Novelty is therefore acknowledged.

3. **inventive step**

The problem underlying the present application appears to reside in the provision of oxazolidinone derivatives as antibiotics.

The cited prior art discloses compounds for the same use as in the present application. D1 is considered to represent the closest state of the art. The definition for R3 in D1 differs from the corresponding definition in the present application in that a heterocycle may be present, however it is not directly attached to the methylene ring but only via a linking heteroatom. However, D2 and D3 teach that the oxazolidinone ring may be substituted by a N-linked heteroring to the methylene linking group.

Therefore the features disclosed in D3 and D2 would be combined by the skilled person with those disclosed in D1, without exercise of any inventive skills in order to solve the problem posed. The proposed solution in independent claim 1 thus cannot be considered inventive in the absence of data which show unexpected effects of the currently claimed compounds compared to the structurally closest compounds known from D1.

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

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4. Claims 9 to 11 refer to a method for treatment of the human or animal body by therapy.
5. WO2004/033451, published on 22.04.2004, is not taken into account for the purposes of the present opinion.